

GETTING THE MOST OUT OF RWIS AND WEATHER FORECASTS

PRESENTERS:

Bryon Breen - Idaho Transportation Department

Bill Brown - Washington DOT

Steve Conger - Utah DOT

What weather information are you using today?

Bryon Breen

- Idaho has 28 RWIS sites, but they are not adequate for the state's needs. We obtain Pavement/Weather Forecasts from private vendors at nine of these sites, locations decided by districts. Also planning to integrate weather sites from the National Weather Service, the Federal Aviation Administration and other governmental agencies. These weather stations' reports have real-time atmospheric (valuable). There are over 300 of these weather stations throughout Idaho. We plan to integrate about 60 of these sites into a Web site for use by the public and Maintenance personnel.

Bill Brown

- Washington has a consortium of agencies throughout the state and specialized web pages. Also use the National Integrated Weather Service.

Steve Conger

- Utah has 40 sites and three private vendors, and eight avalanche weather information stations.
- They fax weather forecasts to the sheds, when needed.
- Consultant meteorology stations.
- Email warnings from local National Weather Service.
- RWIS research site – sensor testing.
- Real-time satellite transmission.
- Sites need to be communicable, with minimal operational cost.

Audience question: Does Utah have a decision-making page on their web site?

Steve Conger: The site has links to radar data, consultant meteorologist.

Bryon Breen – Does any agency use thermal mapping or camera imaging?

- Bill Brown – Not always reliable as to route conditions.
- Vancouver Island, BC has plans for thermal mapping this fall.
- Bryon Breen – Idaho getting free trial thermal mapping.

Accuracy of the National Weather Service was discussed.

- Bill Brown noted lack of coastal information, although improved over the last decade. Radar information has been proposed along the coast.
- Steve Conger – Utah does not use the National Weather Service for real-time.
- Gold Coast, BC – To get a system that works, forecasting agencies need to know specific area and what operators need.

Audience question: What is the annual budget for sites?

- Steve Conger – Utah just replaced hardware and computer, which came to just under \$1,000,000. \$300,000 is spent each year for programming, \$1,000 in maintenance costs. Contract quotes \$1,800-\$3,500 per site. Component costs for hardware on site run between \$1,300-\$3,500. Communication costs (fiber optics) are under \$100/yr/site.

Who in agency has access to information, and how is each type of information used?

Bryon Breen - Idaho sheds are not linked to internet – work in process to get information link to them that is password protected.

Bill Brown – Washington has a web page for public use – surface temperature, highway network map. Internally, SSI graphic network (high band width, cumbersome for some to use, hard to access in sheds). Fax-based system for ice, snow, frost on a 1-10 scale system. Most Washington communication systems are internet-based.

Steve Conger – Trying to get information to user without using computer, with 800 number access available 24-7. Steve supports the Maintenance Decision Support System (MDSS) project.

Audience comment: It is a problem to access all information on the web site and pass it along to other users.

Bill Brown – Formatting is a problem with the National Weather Service site.

Steve Conger – Counties and cities in Utah and the Utah Highway Patrol use the RWIS site.

What specific elements of weather information do you use?

- 1) Intensity.
- 2) Road sensors – temperature and predictions.
- 3) All information will be used at some point in time – visibility, chemical factors, wind.
- 4) Integration project - people want jet stream and barometric pressure maps.
- 5) Meteorology education important – need to be amateur meteorologist.
- 6) Sensors based on what's on the road are important – to measure chemical concentrations and freeze points.

Bill Brown – People are not ready to believe pavement sensors yet – concerns about accuracy.

Audience comment – Pavement sensors are so small, cannot gauge whole road on them.

Bill Brown – In Future: Truck-based systems calculating chemicals on road – sending information back to database.

Audience Comment - Site needs to be representative of large area.

Bill Brown – Site plan should be done by someone with meteorological background. Problems can arise if not located in right place. Operational costs to be balanced with needs.

Steve Conger – Sensor vendors need to consider what is being measured, siting needs, layout of installation, maintenance and calibration – that data most useful to the largest number of people. Technology was developed when using salt and sand. Now using chemicals - tactical vs. meteorological.

Audience question: Is there legal liability if an operator using the sites interprets information wrong?

Bill Brown – Disclaimer to public - Follow operation plan to protect against liability.

Steve Conger – Follow what your Risk Management person tells you to do. Utah was involved in an avalanche case that went to the District Supreme Court, but were found not liable.

What changes are needed to improve?

- Mobile sensors
- Site importance
- Maintenance calibration
- National effort (FHWA)

Bill Brown – Use universal meteorological departments – Models based on different data sets – ensemble forecasting.

Is the present level of training adequate?

- Field people need to get used to using RWIS information.
- Consultants will train in field and districts – ongoing process.

Bill Brown – most overlooked – interpreting weather and using RWIS system. How does anti-icing interact with RWIS system? Refresher course on how to interpret information.

What works, what doesn't?

- 1) Timing of updates – problem in US and Canada
- 2) Having sites located near the yards helps user see how it works
- 3) Cameras beneficial